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(54) FORMATION OF THIN FILM

(57) Abstract:

PROBLEM TO BE SOLVED: To form a WSiN or TaSiN thin film which does not include halogen by CVD.

SOLUTION: With bismethyl cyclopentadienyl tungsten hydride, NH_3 , and SH_6 being used as material gases, a WSiN film 39 is formed by low pressure thermal CVD. After that, CVD is continued to form a Cu film 40. In this method for forming a thin film, organic metal gas including W (or Ta) is used as material gas and so, a thin film with no halogen impurities mixed in can be formed. By using the WSiN or TaSiN thin film formed by this method as a metal adhesive layer for a metal interconnect such as a W and Cu interconnect or a barrier metal, a very reliable high melting point metal interconnect or a low resistance metal interconnect can be formed.

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